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ZOÖLOGY.

FOOD PLANTS OF NEW ENGLAND BUTTERFLIES.—The following list of the plants upon which the larvæ of our New England butterflies are known or reasonably supposed to feed, has been drawn up after a careful examination of many authorities, and by the kind communications of several friends. In especial, we would mention Messrs. William Saunders and W. H. Edwards. To give the authorities in every instance would extend the list unnecessarily; any additions to it, or correction and confirmation of the probable food plants, would be most grateful to the author.

Papilio Asterias, cultivated and native umbelliferous plants; often found in abundance on parsley and carrots. *P. Troilus*, sassafras, spicebush, prickly ash; will eat lilac sparingly. *P. Turnus*, apple, wild thorn, choke cherry, cultivated cherry, alder, tulip, black-ash, birch, basswood, oak. *P. Philenor*, aristolochia.

Pieris oleracea, turnip, cabbage, radish, mustard. *P. rapæ*, cabbage. *P. Protodice*, cabbage.

Colias Philodice, clover, garden pea, lupine, lucerne, and other species of medicago.

Terias Lisa, *T. delia*, clover, senna.

Anthocaris Genutia, cruciferous plants.

Chrysophanus Americanus, sorrel and dock. *C. Thoe*, polygonum. *C. Epixanthe*, probably buckbean, water-dock, or some kind of sorrel; possibly cranberry.

Polyommatus Porsenna, probably arrow-wood, elder, or hawthorn.

Lycæna neglecta, cornus and willow; also Erythronium? *L. lucia*, probably the same, and perhaps buckthorn and wild lupine? *L. comyntas*, Lespedeza capitata.

Thecla Clothilde, probably species of Rubus, Genista, and Hedysarum. *T. Falacer*, hawthorn; also oak, and perhaps blackthorn? *T. strigosa*, thorn, oak, apple, willow. *T. humuli*, hop, oak. *T. Auburniana*, smilax?, red cedar? *T. Niphon*, pine. *T. Pembina*, Vicia cracca? *T. Mopsus*, wild cherry, cultivated plum, Eupatorium. *T. Augustus*, Vaccinium? *T. Henrici*, Vaccinium? *T. Acadica*, willow. *T. Scudderii*, Lupinus perennis.

Danais Erippus, different species of Asclepias; also Apocynum.

Limenitis Misippus, willow, poplar, plum. *L. Ursula*, scrub oak, gooseberry, wild cherry, Vaccinium, willow, apple, plum, quince, hawthorn, hornbeam. *L. Arthemis*, thorn. *L. Proserpina*, probably some species of Pyrus.

Argynnis Idalia, *A. Cybele*, *A. Atlantis*, *A. Aphrodite*, probably violets; some of them possibly eat Hedysarum, Polygonum, or Rubus. *A. Myrina*, wild violets and cultivated pansy. *A. Montinus*, probably violets. *A. Bellona*, probably violets; also raspberry?

Melitæa Nycteis, plantain? sunflower. *M. Harrisii*, Diplopappus umbellatus. *M. Tharos*, plantain? *M. Phaeton*, Chelone glabra, hazel; will eat black currant.

Pyrameis cardui, thistle, sunflower, hollyhock, burdock, nettle. *P. Huntera*, Gnaphalium, burdock, thistle, balsam. *P. Atalanta*, nettle, ambrosia, hop.

Junonia Cœnia, Antirrhinum, Linaria.

Vanessa Antiopa, willow, poplar, elm, balm of Gilead. *V. J-album*, hop, elm; also willow? *V. Milbertii*, nettle.

Grapta interrogationis, elm, hop, nettle, ambrosia, basswood, lime. *G. C-argenteum*, wild gooseberry, cultivated currant and blackberry, elm; probably honeysuckle. *G. comma*, hop, ambrosia, nettle. *G. gracilis*, probably nettle, ambrosia, and elm. *G. Faunus*, probably wild gooseberry, elm, and nettle.

Chionobas semidea, probably sedges; possibly lichens.

Satyrus Alope, *S. Nephele*, *S. Portlandia*, grasses and sedges.

Hipparchia Boisduvalii, grasses and sedges; probably also darnel.

Neonympha Eurytris, grasses and sedges.

Heteropterus marginatus, Lespedeza capitata.

Nisoniades Juvenalis, Glycine, Lathyrus. *N. Persius*, *N. Brizo*, Pulse family. *N. Catullus*, Monarda punctata.

Eudamus Tityrus, Robinia pseudacacia and viscosa, American Wistaria. *E. Lycidas*, Hedysarum. *E. Bathyllus*, Glycine and Hedysarum.

Hesperia Metacomet, *H. Verna*, *H. Massasoit*, probably grass. *H. Hobomok*, *H. Pocahontas*, *H. Quadaquina*, grass. *H. Leonardus*, probably grass. *H. Mystic*, *H. Sassacus*, grass. *H. Wingina*, probably grass. *H. Wamsutta*, grass. *H. Acanootus*, *H. Egeremet*, *H. Manataaqua*, probably grass. *H. Ahaton*, grass. *H. Oneko*, *H. Samoset*, *H. Vialis*, probably grass. *H. Metea*, coarse and fine grasses; probably also Panicum. *H. Manoco*, probably grass. *H. Hianna*, Glycine? grasses? *H. Panoquin*, probably grass. *H. Mesapano*, grass? *H. Delaware*, *H. Logan*, Panicum and coarse grasses.

Larvæ of unknown species of Hesperidæ have also been found on poplar, scrub oak, hazel and columbine, and Lespedeza capitata.—SAMUEL H. SCUDDER, *Boston Society of Natural History*.

TENNESSEE WARBLER.—Mr. Boardman's statement in the June number of the NATURALIST relating to the abundance of this warbler in his locality is interesting. It shows how irregular is the distribution of some of our birds. This species seems to be one of a class of birds which, though quite rare in other parts of New England, are not at all so in south-eastern Maine, reaching that region I presume via the St. Lawrence and Maine Central water route. I would here enquire if Mr. Trippe's article on "The Warblers" (NATURALIST, vol. ii.) is not written in the locality of Orange, N. J.?* On page 181 we might infer that he had been giving the Warblers of the New England States, if on a perusal of the preceding pages we had not been convinced to the contrary; the species as found by Mr. Trippe showing a decided tendency to a South Alleghanian fauna, as compared with their distribution in New England. —H. A. PURDIE, *Boston*.

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*It is.—EDS.

PAPILIO (VAR?) CALVERLEYI, CAPTURED IN FLORIDA.—While in Florida last April it was my good fortune to capture a female specimen of *Papilio* var. *Calverleyi* Grote, which in some respects differs from Mr. Grote's type (a male), the description of which appeared in the "Proceedings of the Entomological Society of Philadelphia," vol. ii, and which, till now, was unique. The differences are chiefly as follows: Anterior wings wanting the yellow marginal spots; emarginations very slight; the four yellow patches nearest the internal angle suffused with orange, particularly the basal third. At the extremity of the discal cell is a conspicuous yellow band, bounded apically by the nervures. On the under side this is preceded by a small yellow spot. Apical third of the costal nervure with a fine yellow line. Secondaries with the black ground-color more encroached upon by yellow. Fulvous markings preceding the marginal lunules powdered with whitish scales; above the fulvous, and between it and the discal cell, the color is yellow. Anal ocellus pupilled with a well-defined black spot instead of a "narrow faint blackish arcuated line." Tails black without any sprinkling of yellow. Abdomen with *six rows* of yellow dots. Mr. Grote's specimen had but two rows, and *Papilio Asterias*, of which Mr. Edwards considers it a variety, has four.—THEODORE L. MEAD, *New York*.

A REMARKABLE NEW JELLY-FISH.—During an excursion to Eastport, Me., and vicinity, last season, in company with Mr. S. I. Smith and others, we discovered and captured a very large and fine new jelly-fish, rivalling in size even the common red one, *Cyanea arctica*, which it slightly resembles, and for which it might be mistaken at a distance. It is, however, more yellow in color, the large complicated ovaries hanging down below the disk being light orange, and the long frilled mouth appendages bright lemon-yellow. The tentacles are about eighty in number, arranged in a nearly continuous circle, and may extend fifteen or twenty feet in large specimens. They are also very remarkable in being flat and broad, with one edge double and divided into crenulated scallops, which are margined with white, producing a very beautiful appearance. The whole body and tentacles give a white phosphorescent light. The largest specimen was eighteen inches in diameter, and secured among the wharves of Eastport, at noon. It is remarkable that so conspicuous an animal has so long escaped observation. It belongs to a family previously unknown on this coast, and forms the type of a new genus. It was described in the July number of the "American Journal of Science" under the name of *Callinema ornata*.—A. E. VERRILL.

THE SWEDISH NORTH POLAR EXPEDITION OF 1868.—This is the fourth scientific expedition sent out by Sweden to the Arctic regions since 1858, all fruitful in results to geology and other branches of science. After a thorough exploration of Beeren Island on the way, Ice fjord in Spitzbergen, was reached on the thirty-first of July. Ice had already been met with at South Cape, and it increased as they approached the Thousand Isles. The intention was to pass to the eastward of Spitzbergen, but the ice rendered this impracticable. The geology of Ice fjord was carefully explored during the stay here, and the important discovery made of post-tertiary strata containing fragments of plants and shells now found living much farther south in Norway. It was estimated that 2000 or 3000 head of walrus were annually slaughtered in Spitzbergen by Norwegian walrus-hunters, showing that there must be a large tract of meadow land free from ice to sustain so large a number of these animals, unless they travel over from Nova Zembla. They then endeavored to penetrate to Greenland along the eightieth parallel of latitude, but impenetrable masses of ice, tending north-east and south-west, rendered this impassable. Turning then to north and north-east, they reached 81° 16′ north latitude. Here the ocean was sometimes covered with a thin coating of ice, and the old ice northward was quite impassable, the temperature sinking to 21° F. On the 29th of August the "Sofia" entered Liebde Bay, in Northern Spitzbergen. The deep-sea soundings revealed the interesting fact that Spitzbergen was connected with Scandinavia by a submarine bank, having a *maximum* depth of three hundred fathoms. North and west of Spitzbergen the sea deepens to 2000 fathoms and more. At the greatest depths animal life was found. At 2600 fathoms Foraminifera were brought up. Liebde Bay was now for the first time explored, both in its topography and geology; its climate was mild and calm, while out at sea high winds and snow storms prevailed. After a vain attempt to reach Gilles' Land, the "Sofia," on the 16th of September, made a final endeavor to penetrate the ice to the northward, succeeding at length in reaching 81° 42′, the highest point probably yet reached by a vessel, Scoreby's farthest (in 1806) being 81° 30′; and Parry's (in 1827) 81° 6′; but Parry, in sledges on the ice, reached 82° 45′. The ice to the northward of this was broken, but so closely packed that not even a boat could pass forward,*and farther westward (on the meridian of Greenwich) the limit of this impenetrable ice came down to 79°. At night the vessel lay to beside the larger sheets of ice, but the temperature having sunk to 16° F., the risk was run of finding themselves blocked up in the morning. After returning to Spitzbergen, and leaving letters announcing their intentions, they made another last push for the north on the 1st of October, but when in latitude 81° all farther endeavors were put a stop to by a collision with an ice block, which opened a large leak in the vessel's side. With great difficulty they regained the land, the water standing two feet over the cabin floor. The intention of wintering here was then abandoned, and the "Sofia" returned to Norway.—*Scientific Opinion.*

NOTE ON THE "BLOWING" OF WHALES.—The celebrated Norwegian naturalist, M. Sars, was the first, or one of the first, to assert that whales when "blowing" did not throw up water into the air, unless the "blow-hole" was beneath the surface. The popular idea has been, and is opposed to this. While cruising in the North Pacific, and Behring's Sea, I paid particular attention to this point. I was very fortunate in seeing many whales at close quarters, particularly a small species known as the "blackfish," which often played around the vessel all day, sometimes not ten feet from her hull. I observed that while no water, or only a very minute quantity, was ejected when the "blow-hole" was out of water, still the air ejected had an appearance like one's breath on a cold day, somewhat like vapor. Sometimes when very close I fancied I perceived a disagreeable odor. On mentioning this to the captain, an old whaler, he informed me that the vapor ejected by the sperm whale was so fetid as to nauseate any one immediately who was unused to it; that he had been so affected himself when he first went a whaling, and also that the mucus sometimes thrown out when "blowing," is commonly believed by whalers to raise a blister, if it comes in contact with the skin. Cannot some of our New Bedford friends add to our information on these subjects?—W. H. Dall.

While on a voyage to Labrador in 1864, we had good opportunities of observing the spouting of whales, the stream of vapor issuing from the blow-hole, and immediately disappearing. As we stated in the "Proceedings of the Boston Society of Natural History," for 1866, the three genera of whales we observed, *i. e.*, the Sperm, Finner and Hump-back, "can be easily distinguished by the differences in the stream of vapor spouted out when the animal comes to the surface to breathe. Thus, according to my informant, Capt. I. Handy, an experienced whale fisherman, and a very accurate observer, the 'spout' of the sperm whale issues in a single short stream of vapor from the extreme end of the nose, and curls over in front of the head. The spout of the Fin-back forms a single column of vapor about ten feet high. The Right and Hump-back, and Sulphur-bottom, all 'blow' in a double stream, which is directed backwards, towards the tail." —A. S. P.

The Mottled Owl again.—I noticed in the September number (vol. ii) of the Naturalist a communication from Dr. Wood, concerning the Mottled Owl, in which he rather leans to the opinion that the Red and Gray Owls are different birds, and in the August number a note from Mr. Allen, who evidently considers them one and the same bird, subject, however, to variations of plumage. The latter conclusion is, I am convinced, the true one, but as the matter does not seem to be quite cleared up, I would like to send you a few observations of my own that may serve to throw some light on the subject.

On the 30th of May last I found a nest of the Mottled Owl, in an apple tree, at Concord, Mass., containing four young birds (apparently about two weeks old) and their mother. Although but few feathers had begun to appear on the young their coloring was nevertheless very apparent; two were *red*, the remaining two *gray;* the mother was red. Selecting a red and gray owl from the young brood I replaced the others in the nest, and started for home with my prize. For the next two or three weeks they grew apace, feeding greedily upon meat of all kinds, giving, however, a decided preference for small birds, which they soon learned to tear up for themselves. While I was absent in August, the person to whose care they were entrusted, becoming tired of her charge, turned them out of the cage in which they had thus far been kept. At first they seemed to exult in their new-found freedom, keeping away from the house, and during the greater part of the night answering one another from the trees in the garden, but after a trial of several days, finding themselves unable to procure food, they came back and ventured by degrees into the kitchen, where they were well received and fed, and after that they regularly returned with the twilight, entering through an open window or door, and after flying noiselessly about the room, settling on the edge of a table, or the back of a chair. Early in September they moulted, and in their second plumage still retained their distinguishing colors. They remained with us till the latter part of October, when they both suddenly disappeared.—WILLIAM BREWSTER, *Cambridge, Mass.*

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

THE SALEM MEETING OF THE AMERICAN ASSOCIATION.—It is a sudden transition from the lake and prairie scenery about the great city of Chicago, where the Association held its meetings last year, to the small and quiet City of Peace, resting between the rock-bound coasts of Nahant and Cape Ann, with its picturesque environs and pleasant beaches at Beverly, Swampscot and Nahant. From present appearances the meeting will be largely attended, and the sessions prove at least of the usual interest. As various short excursions about Essex County are projected we give a brief sketch of the physical features of the vicinity of Salem. The soil is underlaid by gneiss rocks, with trap and granite overflows, forming picturesque hills and knolls, of which the highest in the immediate vicinity of Salem is Legg's Hill, about a mile south of the city, from which a good view of the harbors of Salem and Boston, and the Cape Ann shore can be obtained. The trap eruptions prevail through Swampscot, Marblehead and about Salem, rising abruptly into irregular knolls and bosses, with salt marshes or upland clays and gravels stretching away from their base. Along the shore, often very precipitous and broken by caves and fissures, are seen fine exposures of trap dykes and intrusive masses of sienite, indicating in some cases several successive eruptions; the sienites thus injected being often changed into a peculiar greenish or reddish jasper, many pebbles of which are found in the pudding-stone about Roxbury. The age of these rocks is not yet definitely known, and the question of their age and that of the igneous rocks accompanying them, and their relation to the beds of conglomerate about Boston, and the Lower Silurian rocks at Braintree, renders the geology of Essex and Sussex County a most difficult, though extremely interesting study, and one as yet but hardly touched upon by